

Masao KITAGAWA* & Tetsuo KOYAMA**: Concerning the
variants of *Tricyrtis macrantha* Maxim.

北川政夫*・小山鉄夫**: ジョウロウホトトギスの変異

Tricyrtis macrantha Maxim. is an elegant hardy Japanese species which grows hanging on moist rocky cliff by torrent and is unique in having a solitary flower at each axile of leaf in the upper part of pendent stem. In 1887, it was first found on Mt. Yokogura in Shikoku, the southwestern part of Japan, by Dr. Makino, and basing upon the collection, Maximowicz described it in 1888. Then it got to be known also from a few localities in the southern part of the Kii Peninsula and in one place in the province of Hyuga, Kyushu. Recently, in addition to these localities, this rare species was newly collected in two places around Mt. Tanzawa in the Tanzawa mountain mass in eastern Honshu. This quite unexpected discovery brings this species of interesting disjunct distribution into a light.

Being considered to be rather an old species, this plant is morphologically differentiated to a considerable extent in each isolated locality. In 1935, Dr. Masamune described the plants from Kii as *T. macranthopsis*, distinguishing them from true *T. macrantha* of Shikoku by the different shape of the leaf-bases. As illustrated in Fig. 1-4, the leaf-bases of *T. macranthopsis* (B 4) embrace the stem, while in *T. macrantha* (A 4) either auricle at the cordate leafbase is distinctly on the one side of the stem. But in other characters, these two are almost alike, then the plants from Kii have recently attributed to a variety under *T. macranthopsis* by Mr. Okuyama and the junior author (1956). Because the plants from Tanzawa (Fig. 1, 5) do not quite agree with either of the two, though they are rather near to *T. macranthopsis* than to *T. macrantha*, this variant is here named *Ishiiana* in honour of its first discoverer, Mr. H. Ishii. From both kinds, it differs by the flowers disposing in a clear raceme terminating the stem. Furthermore, from *T. macranthopsis* it is distinguished in its broader spur of the outer perianth segment, longer horn-like lamellae on the inner perianth segment, and smaller size of anthers, and from *T. macrantha* by the broader spur, glabrous stem and leaves, etc. (Fig. 1, 1-3).

If the plants from Kii are regarded as a different species from *T. macrantha* itself, a specific rank should also be granted to this Tanzawa plant. We recognize

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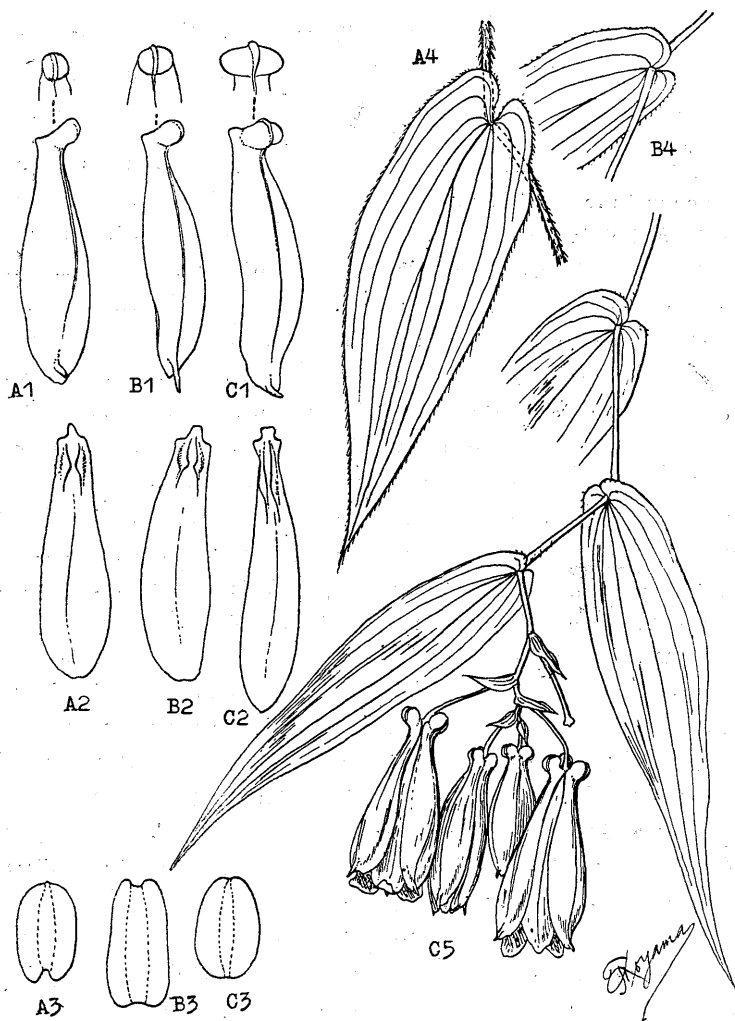


Fig. 1. A: *Tricyrtis macrantha* Maxim. (typical); B: Ditto var. *macranthopsis* Okuyama et T. Koyama; C: Ditto var. *Ishiiana* Kitagawa et T. Koyama—1: Outer perianth segment with the front view of its spur; 2: Inner Perianth segment; 3: Anther; 4: Leaf with a part of stem; 5: Upper part of stem. All except 3, $\times 2/3$ (Icon. orig.)

all these variations as the geographical varieties under *T. macrantha*, not only for the reasons mentioned below but also for that the shape of flowers and leaves of the

three is not different enough to separate them specifically from each other. Such a peculiar base of leaf in *T. macrantha* is, as observed by Mr. Okuyama and the junior author in 1956, is restricted in well grown individuals, i. e. in small plants and in the upper part of the stem, leaves do not embrace the stem, not being cordate at their bases. The true raceme in var. *Ishiiiana* is an extreme state bearing much reduced upper leaves.

It is also noteworthy that some characters tend to vary geographically. The most hairy plant is *T. macrantha* itself, which has leaves hairy on the lower surface and along the margin, and densely hispid stem. In var. *macranthopsis*, a hairy part is restricted on the margin of leaves, and then, var. *Ishiiiana* is nearly glabrous. The spur of the outer perianth segment is largest in var. *Ishiiiana* and smallest in *macrantha* (Fig. 1, 1). This character is correlated with the length of the horn-like appendage inside the inner perianth segment, which is longest in var. *Ishiiiana* (Fig. 1, 2). Leaves are broadest in *macrantha* and narrowest in var. *Ishiiiana*.

Dr. Koidzumi created a new genus, *Brachycyrtis*, to accommodate to the present species, indicating the spur at the base of the outer tepal as the chief distinguishing point from *Tricyrtis*, the typical plant of which bears outer tepal with a sacc-like base. This character is adopted by us to separate sections in this paper.

Nomenclatorial treatments.

Tricyrtis Wallich, Tent. Fl. Nepal. 2: 61, t. 46 (1826); Kunth, Enum. Pl. 4: 278 (1843); Baker in Journ. Linn. Soc. 17: 463 (1879); Bentham & Hook. fil., Gen. Pl. in Engl & Prantl, Nat. Pflanzenf. 2(2): 27 (1887); Masamune in Journ. Trop. Agr. Formosa 2(1): 37 (1930); Ohwi, Fl. Japan 288 (1953).

Sect. **Tricyrtis**.—*T. pilosa* Wallich (Species typica), *T. hirta* Hook.; *T. macro-poda* Maxim., *T. flava* Maxim., &c. pertinent.

Sect. **Brachycyrtis** (Koidz.) Kitagawa & T. Koyama, stat. nov.—Gen. *Brachycyrtis* Koidzumi in Bot. Mag. Tokyo 33: 100 (1924)—*Tricyrtis* subgen. *Brachycyrtis* (Koidz.) Masamune in Journ. Trop. Agr. Formosa 2(1): 39 (1930)—Sole species, *T. macrantha* Maxim. pertinent.

Tricyrtis macrantha Maxim. in Mém. Biol. 12: 928 (1888); Makino, Illustr. Fl. Japan 1: t. 1 (1888); Matsumura, Index Pl. Japon. 2(1): 216 (1905); Makino & Nemoto, Fl. Japan 1283 (1929); Masamune, l. c. 39 (1930), saltem. p. p. maj.; Ohwi, Fl. Japan 289 (1953)—Japonia, Shikoku, *T. Makino* anno 1887.

Brachycyrtis macrantha (Maxim.) Koidzumi, l. c. 100 (1924).

Distrib. Japonia: Tosa & Hyuga.

var. **macranthopsis** (Masamune) Okuyama & T. Koyama ex Okuyama (Handb. Pl. Collect. t. 7. 1953, com. nuda) in Journ. Jap. Bot. **30**: 41 (1955).

T. macranthopsis Masamune in Trans. Nat. Hist. Soc. Formos. **25**: 251 (1935); Ohwi, Fl. Japan 289 (1953)—Japonia, Kii, *Matsuda* 2346.

Brachycyrtis macranthopsis (Masamune) Honda, Nomina Pl. Japon. ed. 1, 468 & 502 (1939).

Distrib. Japonia: Kii & Ise.

var. **Ishiana** Kitagawa & T. Koyama, var. nova recedit ab utrisque supra scriptis floribus in racemo terminali dispositis, calcaribus tepalorum exterioribus magis latioribus.

Caulis 2 ad 5 dm altus; folia ablongo-ovata lanceolatave 4.5–9 cm longa 15–25 mm lata fere glabra; flores 3–5 in racemo terminale fastigiatim dispositi, bracteis ovatis ad 8 mm longis; calcares tepalorum late obovatae 4–5 mm longae 5–6 mm latae.

Holotypus: Japonia, Prov. Sagami, monte Togatake. Leg. H. Ishii, sin. num., 2/IX/1957 (TNS).

神奈川県丹沢山塊にジョウロウホトトギスがある。最初の発見者は石井初男氏（神奈川県本町中学校教諭）で、昨年9月に採集されたのであつたが、当時個体が少なかつた事と採集地点が唯一箇所であつたので、この植物を発表するのに不充分であつたが、其の後丹沢山地の他の地点でも同一物が見出されて、この植物に確信を持つ事が出来た。現在ジョウロウホトトギス類では、トサジョウロウホトトギスとキイジョウロウホトトギスとの2品が報告されて居るが、この丹沢の植物は花が充分に花序と言える着き方をすると、外花被片の距が大きい点で、上のいずれとも区別されるので**サガミジョウロウホトトギス**（新称）と命名する。これら三者の区別は次の通りである。

- 1) 花は茎の上方の葉腋に単生し、明瞭な花序の形をとらない。
- 2) 葉身基部の耳は両方共茎の一方の側にある。（挿図 A4 を見よ）……………トサジョウロウホトトギス *Tricyrtis macrantha* Maxim. (土佐, 日向)。
- 2) 葉身の基部は茎を抱く。（同図 B4）……………キイジョウロウホトトギス var. *macranthopsis* Okuyama et T. Koyama (紀伊, 伊勢)
- 1) 花は明らかな総状花序をなし、稍繖房状に着く。（同図 C5）……………サガミジョウロウホトトギス var. *Ishiana* Kitagawa et T. Koyama, var. nova

これら三者は考え方によつてはそれぞれ別種との見方も出来ようけれども、私達は欧

文欄に述べた理由から、それぞれ地理的に孤立して或程度分化した変種と見る見解を採った。特にサガミジョウロウホトトギスで花序部が明瞭な点は興味深い、これも葉が退化した極限と考え度い。サガミジョウロウホトトギスは今後伊豆半島辺りの溪流沿いで発見される可能性も無論あると思われる。図解と変異の測定に供した材料は総て生品と液漬標本に依っている事を附記しておき度い。

○カヤツリグサ科の3雑種(小山鉄夫) Tetsuo KOYAMA: Three natural hybrids of Cyperaceae from Japan.

1) フトボタニガワスゲ——タニガワスゲとヤマアゼスゲの間種で外形は殆んどヤマアゼスゲであるが、雄花穂・雌花穂共色彩が黒紫褐色であるので区別される。果胞の形は第1図に示した様に全く中間の形態をとる。ヤマアゼスゲの果胞は a 図の如く円く、甚だ短い嘴があり、表面の斑は銹色を呈する。(長さは平均 2mm)。又、タニガワスゲの果胞は c 図の様に長い嘴があつて巾狭く、嘴が黒紫褐色を呈する以外斑も殆んどない(長さ 3.5-4mm)。この雑種の果胞は b であるが、形はヤマアゼスゲの形質を多く受け継ぎ、嘴部と色彩はタニガワスゲと同じである。尚ヤマアゼスゲはオタルスゲ・サドスゲに雑種する例が知られ、タニガワスゲはタヌキランと掛け合わさる事が報ぜられている。この新雑種は別府の荒金正憲氏が発見されたので、種名は氏に因む。

Carex × *Arakanei* T. Koyama, hybrida nova inter *C. forficula* Fr. & Sav. et *C. heterolepis* Bunge. Cum specie posteriore ut videtur similis est, differt tamen utriculis sursum alato-marginatis in rostrum longum angustum utrinque sparse hispidulum abrupte attenuatibus, ore bidentula. (Fig. 1, b)

Bungo: Ikaitobaru (M. Arakane 44, 22/V/1958—Typus in TI).

2) チャイロクグガヤツリ——チャガヤツリとクグガヤツリとの自然交配種で、栃木県赤麻沼畔のタデの多い砂地に多数見出された。かなり叢生して、花序部に形のくづれがあるから一見雑種とわかるのであるが、比較的細く硬い稈と葉、それに赤褐色の小穂等チャガヤツリの形質が強く打ち出されている。小穂が長く且太い点が、叢生する点と共にクグガヤツリの性質である。果実はよくみのり、為に広い面積にわたつて拡がつたのであろう。千葉の伊藤至氏と私の採集品である。

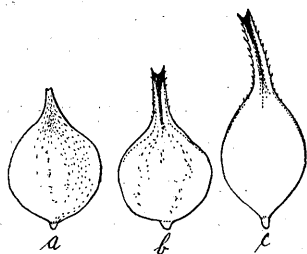


Fig. 1. Perigynia of *C. heterolepis* (a), *C. forficula* (c) & *C. Arakanei* (b), a hybrid between the former two. (all ×9). ヤマアゼスゲ (a), タニガワスゲ (c) とその間の雑種フトボタニガワスゲ (b) の果胞。